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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,173	02/10/2005	Vitalij Lissotschenko	A-9211	6686

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Arlington, VA 22202

EXAMINER

FANG, JERRY C

ART UNIT	PAPER NUMBER
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2873

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/20/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/505,173

Applicant(s)

LISSOTSCHENKO ET AL.

Examiner

Jerry Fang

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowarz et al. (US 2003/0086179) as applied to claim 1 above, and further in view of Wheeler et al. (US 5,640,473).

Regarding claim 1, Kowarz discloses at least one modulation means (Fig. 1, 16) which can change at least in part the laser radiation (Fig. 1, 13) which passes through the modulation device, wherein the modulation device comprises beam splitter means (Fig. 1, 14) which can split the laser radiation into at least two component beams of radiation, that the device furthermore in the direction of beam propagation downstream of the beam splitter means comprises beam combining means (Fig. 4 and Para. 0023) which can recombine at least two of the component beams of radiation, and that at least one modulation means is located between the beam splitter means and the beam combining means such that at least one of the component beams can be changed by at least one modulation means such that the laser radiation which has been combined by the beam combining means or in an area of the beam combining means at least in a given area of space has the desired modulation as a result of the interference of at least

Art Unit: 2873

two component beams (Fig. 1 and Fig. 4), wherein the laser radiation has at least in sections, in a first direction (Y), the fast axis, which is perpendicular to the middle direction (Z) of propagation, a second direction (X), the slow axis which is perpendicular to the middle direction (Z) of propagation and to the first direction (Y), the separation in to component beams taking place in the first direction (Y) (Fig. 4 and Para. 0023).

Kowarz fails to disclose wherein a first direction (Y), the fast axis, a greater divergence than in a second direction (X). Wheeler discloses wherein a first direction (Y), the fast axis, a greater divergence than in a second direction (X) (Col. 6, Lines 30-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the laser characteristics as taught by Wheeler, with the optical device of Kowarz, since as shown by Wheeler, such laser characteristics is commonly used in order to enhance the performance of an optical device.

Regarding claim 9, Kowarz discloses wherein the at least one modulation means are made as a modulator which is to be operated in transmission (Para. 0023).

Regarding claim 10, Kowarz discloses wherein the at least one modulation means are made as a two-dimensional modulator with which laser radiation which is incident on it can be modulated with respect to two directions which are essentially perpendicular to one another (Para. 0023).

Regarding claim 11, Kowarz discloses wherein an interferometer is formed by the beam splitter means (Fig. 1, 14), the modulation means (Fig. 1, 16) and the beam combining means (Fig. 4 and Para. 0023).

Regarding claim 12, Kowarz discloses wherein the direction (Z) of beam propagation downstream of the beam combining means there is a diaphragm which can mask out parts of the laser radiation corresponding to the modulation which is to be achieved (Fig. 1, 22).

Regarding claim 13, Kowarz discloses wherein in the direction (Z) of beam propagation upstream and/or downstream of the diaphragm there are lens means, cylinder lenses which can focus the laser radiation onto the diaphragm and/or following the diaphragm can re-collimate the focused laser radiation (Fig. 1, 72 and 74).

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowarz et al. (US 2003/0086179) and Wheeler et al. (US 5,640,473) as applied to claim 1 above, and further in view of Hashimoto et al. (US 5,289,312).

Regarding claim 3, Kowarz, as detailed in claim 1 rejection above, fails to disclose wherein the beam splitter means are made as a prism or as an at least partially mirrored prism. Hashimoto discloses wherein the beam splitter means are made as a prism or as an at least partially mirrored prism (Col. 1 Line 50 – Col. 2 Line 2). It would

Art Unit: 2873

have been obvious to one of ordinary skill in the art at the time the invention was made to use prism as a beam splitter as taught by Hashimoto, with the optical device of Kowarz, since as shown by Hashimoto, a prism is commonly used in order to create a beam splitter.

Regarding claim 4, Kowarz, as detailed in claim 1 rejection above, fails to disclose wherein the beam splitter means are also made as a partially transparent mirror. Hashimoto discloses wherein the beam splitter means are also made as a partially transparent mirror (Col. 1 Line 50 – Col. 2 Line 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to a partially transparent mirror as a beam splitter as taught by Hashimoto, with the optical device of Kowarz, since as shown by Hashimoto, a partially transparent mirror is commonly used in order to create a beam splitter.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowarz et al. (US 2003/0086179) and Wheeler et al. (US 5,640,473) as applied to claim 1 above, and further in view of Freedman et al. (US 3,676,866).

Regarding claim 5, Kowarz, as detailed in claim 1 rejection above, fails to disclose wherein the beam combining means are made as a prism, or as an at least partially mirrored prism. Freedman discloses wherein the beam combining means are made as a prism, or as an at least partially mirrored prism (Col. 3 Lines 26-38). It would

Art Unit: 2873

have been obvious to one of ordinary skill in the art at the time the invention was made to use a prism as a beam combiner as taught by Freedman, with the optical device of Kowarz, since as shown by Freedman, a prism is commonly used in order to create a beam combiner.

Regarding claim 6, Kowarz, as detailed in claim 1 rejection above, fails to disclose wherein the beam combining means are made as a partially transparent mirror. Freedman discloses wherein the beam combining means are made as a partially transparent mirror (Col. 3 Lines 26-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a partially transparent mirror as a beam combiner as taught by Freedman, with the optical device of Kowarz, since as shown by Freedman, a partially transparent mirror is commonly used in order to create a beam combiner.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowarz et al. (US 2003/0086179) and Wheeler et al. (US 5,640,473) as applied to claim 1 above, and further in view of Amm (US 2002/0145806).

Regarding claim 7, Kowarz, as detailed in claim 1 rejection above, fails to disclose wherein the at least one modulation means can change at least one component beam of radiation such that it undergoes a concerted phase shift of at least one of its component rays, by half the wavelength of the laser radiation. Amm discloses

wherein the at least one modulation means can change at least one component beam of radiation such that it undergoes a concerted phase shift of at least one of its component rays, by half the wavelength of the laser radiation (Para. 0003). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the modulation means as taught by Amm, with the optical device of Kowarz, since as shown by Amm, such modulation means is commonly used in order to modulate light.

Regarding claim 8, Kowarz, as detailed in claim 1 rejection above, disclose wherein the at least one modulation means are made as a modulator which is to be operated in reflection (Para. 0023). Kowarz fails to disclose wherein the modulation means can be used as a GLV modulator. Amm discloses wherein the modulation means can be used as a GLV modulator (Para. 0012). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a modulator means as a GLV modulator as taught by Amm, with the optical device of Kowarz, since as shown by Amm, a modulator means is commonly used as a GLV modulator.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

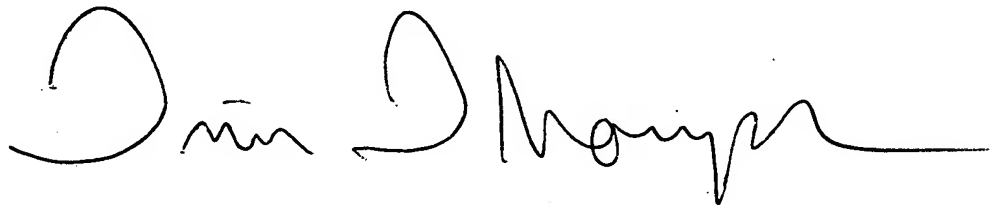
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Fang whose telephone number is 5712726013. The examiner can normally be reached on 10-8.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 5712722333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2873

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

J.F.
12/11/2006

A handwritten signature in black ink, appearing to read "Tim Thompson", with a long horizontal flourish extending to the right.

**TIMOTHY THOMPSON
PRIMARY EXAMINER**